CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Fifteenth meeting of the Conference of the Parties
Doha (Qatar), 13-25 March 2010

CONSIDERATION OF PROPOSALS FOR AMENDMENT OF APPENDICES I AND II

A. Proposal

Delist *Euphorbia misera* from Appendix II.

B. Proponent

Mexico and the United States of America*

C. Supporting statement

1. Taxonomy

1.1 Class: Magnoliophyta

1.2 Order: Magnoliopsida

1.3 Family: Euphorbiaceae

1.4 Genus, species or subspecies, including author and year: *Euphorbia misera* Benth.

1.5 Scientific synonyms: *Euphorbia benedicta, Trichosterigma benedictum, T. miserum*

1.6 Common names: English: cliff spurge, Saint Benedict spurge
French:
Spanish: hamácj, jumetón, lechosa, golondrina

1.7 Code numbers:

2. Overview

Euphorbia misera, native to Mexico and the United States of America, has been listed in CITES Appendix II since 1975. According to CITES trade data, international trade does not appear to be a factor affecting the status of this species. We are proposing to delete this species from the CITES Appendices. Since listing, there has been minimal CITES-recorded international trade (1 shipment of 5 artificially propagated specimens from the United States in the 1990s).

The species is intrinsically vulnerable to extinction due to its limited and fragmented distribution and low reproductive output. *Euphorbia misera* is used medicinally in Mexico, which use appears to be highly localized. The species is known in commercial cultivation in the United States, where there is domestic

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trade in cultivated specimens. The species is easily propagated and there is no evidence of harvesting from wild populations in the United States, where it is illegal to dig wild plants for resale without a permit. There have been no reports of illegal wild collection or of illegal international trade. In the United States, the species experienced a range reduction prior to the 1990s, but populations are considered stable if left undisturbed. Today, a little more than half of the known localities in Mexico and the United States occur in protected areas. Habitat destruction has been one of the main threats to this species, and herbivory may also be a threat to this species range-wide. A CITES listing does not ameliorate the potential threats to this species from habitat destruction or herbivory, nor does CITES protect species from domestic trade in the absence of international trade.

Given that there is no international trade in this species, *Euphorbia misera* no longer qualifies for inclusion in Appendix II, according to the criteria outlined in Resolution Conf. 9.24 (Rev. CoP14). Moreover, this species does not qualify for listing under Article II.2.(b) due to similarity of appearance to other succulent *Euphorbia* spp. that remain in Appendix II.

This proposal is based on a review of the biological and trade status of the species by the United States as a contribution to the Review of the Appendices by the Plants Committee (PC), which has been evaluating the listings of succulent *Euphorbia* species listed in Appendix II since the 15th meeting of the Plants Committee (PC15; Geneva, 2005). Unfortunately, while a document on the review of these species had been submitted to the 18th meeting of the Plants Committee (PC18; Buenos Aires, 2008) (see <www.cites.org/eng/com/pc/18/E-PC18-16-01-02.pdf>), the PC was unable to discuss the document. Currently, all succulent species of *Euphorbia* are listed in CITES Appendix II, except for 10 species that are in Appendix I.

3. Species characteristics

3.1 Distribution

Euphorbia misera is native to primarily coastal areas of north-western Mexico and south-western United States (Bittman in litt. 2008; CONABIO in litt. 2009). The species is more common in Mexico (Bittman in litt. 2008), where it occurs in the states of Baja California, Baja California Sur, and Sonora (CONABIO in litt. 2009), and on the islands of Guadalupe (Bittman in litt. 2008), Dátil, San Esteban, Tiburón (Wilder et al. 2008), as well as East and West San Benito Islands (Junak and Philbrick 2000). In the United States, 26 occurrences are found in 5 southern California counties: Los Angeles (4 insular occurrences), Orange (4 occurrences), Riverside (2 inland occurrences), San Diego (15 occurrences), and Santa Barbara (1 occurrence) (California Department of Fish and Game (DFG) 2009; NatureServe 2009a). Approximately 50 percent of the known distribution records of the species in Mexico and in the United States occur on state, federal or privately-owned conservation areas (CONABIO in litt. 2009; Bittman 2008; California DFG 2009; Roberts in litt. 2009).

3.2 Habitat

Euphorbia misera occurs in xeric scrub (chaparral, desert scrub microphyll, rosetofilous coastal scrub, scrub sarco-crasicaule, and scrub sarcocaule) (CONABIO in litt. 2009) or maritime succulent scrub habitat, at 10-500 meters (m) (32-1,640 feet (ft)) (California Native Plant Society 2008; Bittman in litt. 2008). This habitat, also referred to as coastal scrub habitat, is characterized by low to moderate-sized shrubs, ranging from patchy to continuous cover (de Becker 1988). Coastal sage scrub habitat occurs variously on steep slopes, with sandy mudstone or shale soils, and on dunes and moderately-sloped terraces (de Becker 1988). *Euphorbia misera* grows on cliffs, bluffs, and rock outcroppings (CONABIO in litt. 2009; Junak and Philbrick 2000; Millspaugh 1917; Roberts in litt. 2009; Wilder et al. 2008), where soils are fragile (Roberts in litt. 2009). The species is commonly found in association with other scrub plant species, including the genera *Bergerocactus*, *Ferocactus*, *Mammillaria*, and shrubs such as *Artemisia californica*, *Cneoridium dumosum*, and *Eriogonum fasciculatum* (Bittman in litt. 2008).

3.3 Biological characteristics

Euphorbia misera is a perennial shrub (California Native Plant Society (CNPS) 2008) that is slow growing (Roberts in litt. 2009). The species blooms from December to August (CNPS 2009) and is pollinated by insects (Crepet 1983, as cited in MHCP 2000). Seeds are presumed to be self-dispersed. Little is known about the ecology of the species. In the only population known to occur on Catalina Island, Los Angeles County (California, USA), reproduction is low to nonexistent; the

reasons for this are unknown, although herbivory is suspected (Catalina Island Conservancy 2009a) (see Section 5). Notably, this population flowered and fruited this year, although dry conditions subsequent to this reproductive event may have negatively impacted recruitment (Ratay in litt. 2009).

3.4 Morphological characteristics

A stem succulent (CNPS 2009), *E. misera* is a compact, multi-stemmed shrub, that grows to 0.7-1.4 meters (m) (2-5 feet (ft)) tall. Short, knobby stems, with a thin gray bark, emanate from the base of the shrub and exude milky latex when damaged (Millspaugh 1917; Schwartz and LaFon 1983; Wilder et al. 2008). Leaves are broadly obcordate (heart-shaped at the point of attachment), bright green, and glabrous (hairless). Leaves are typically 2.5-5 centimeters (cm) (1-2 inches (in)) long (including the petiole) and about 2.5 cm (1 in) wide, and are clustered on short branchlets (Millspaugh 1917). Shrubs will lose and regrow leaves several times during the year in response to water availability (Schwartz and LaFon 1983). Typical of plants in the spurge family, the petaloid parts perceived as flowers are actually specialized leaves called bracts. For *E. misera* these bracts are obovate (egg-shaped, with the narrow end at the point of attachment) and cream-colored, forming singly or in groups of 2-3 on a slender peduncle in the axils of terminal leaves. Leaves bear a striking red gland at their base. Female flowers are characterized by a single, central pistil that protrudes beyond the numerous surrounding male flowers that have short-filamented stamens. Fruits are spherical, dehiscent, and 3-lobed. Seeds are pitted, blue-gray, egg-shaped to round, and bear a deep brown ventral line (Millspaugh 1917). One to two seeds are produced per locule chamber (Jepson Flora Project 1993).

3.5 Role of the species in its ecosystem

Euphorbia misera is among the dominant perennial species occurring in coastal scrub habitat, along with species such as *Frankenia palmeri* and *Lycium brevipes* (Junak and Philbrick 2000). Coastal scrub habitat supports a number of vertebrate species, such as *Falco peregrinus* (CITES Appendix I), *Ambystoma macrodactylum croceum*, and *Centrocercus urophasianus* (de Becker 1988). In one locality (Bahia San Quintín, Baja California, Mexico), *E. misera* appears to be an important host to several species of lichens (Rundel et al. 1972).

4. Status and trends

4.1 Habitat trends

Euphorbia misera is found on rocky outcroppings, where soils are fragile (Roberts in litt. 2009). Coastal sage scrub habitat is under development pressure (Multiple Habitat Conservation Program (MHCP 2000)). Habitat alteration is caused by infrastructure development and resultant erosion from road construction and trail-building, ongoing or previous sand and gravel mining, heavy off-road vehicle use, and trash dumping (California DFG 2009). Mexican populations are experiencing threats from coastal development, especially in northern Baja California (Bittman in litt. 2008; CONABIO in litt. 2009). The northernmost extant mainland populations of *E. misera* in the United States occur in Orange County, California, where most habitat fragmentation occurred prior to 1990 and remaining habitat is either remote and inaccessible, or is protected on private, state or federal land (Roberts in litt. 2009).

In Mexico, half the known distribution records of the species are located within 6 protected areas: Alto Golfo de California y Delta del Rio Colorado (spanning the states of Baja California and Sonora), Isla Guadalupe (Baja California), Sierra la Laguna (Baja California), El Vizcaino (Baja California), Islas del Golfo de California (Baja California), and Valle de los Cirios (Baja California), with the majority of the occurrences in Valle de los Cirios (CONABIO in litt. 2009).

In the United States, a little over half the known occurrences are located on state, federal or privately protected lands, including several on San Clemente Island (U.S. Navy) (Los Angeles County), Santa Catalina Island (private conservancy) (Los Angeles), Dana Point Headlands (two private preserves) (Orange County), Doheny State Beach (California Department of Parks and Recreation (DPR)) (Orange County), Corona del Mar State Beach (California DPR) (Orange County), Torrey Pines Natural Reserve (California DPR), as well as adjacent habitat within Cabrillo National Monument (National Park Service) and Point Loma Naval Base (Department of Defense) (San Diego County) (California DFG 2009; Catalina Island Conservancy 2009a; Roberts in litt. 2009). The majority of the protected populations (and some of the largest populations) are found in San Diego County (See Section 4.2, Population Size).

4.2 Population size

There are no global population estimates for this species in Mexico and the United States (CONABIO in litt. 2009; California DFG 2009).

In Mexico, the species is characterized in Baja California as being “locally common” on ocean bluffs in several locations (including from Rosarito Beach south to the Ensenada region, and at La Fonda and Baja Del Mar) and as “widespread” on Punta Banda (Reiser 1994).

In the United States, the California DFG reports 26 occurrences in five counties (see Section 3.1, Distribution). Of the reported occurrences, the population estimates ranges from “no estimate,” to as few as 20 plants, to more than 1,000 plants (California DFG 2009). Some of the largest populations occur on protected lands in San Diego County (See also Section 4.1, Habitat trends). Most populations in Orange County are small and fragmented, with a few large populations (Roberts in litt. 2009). One Orange County population, with up to 1,500 individuals (Roberts in litt. 2009), has been described as “comparable in size only to those found in Baja [California,] Mexico” (Carranza 2008). On Catalina Island, there is only one known population (Catalina Island Conservancy 2009a), which included 10-12 plants in 1993 (California DFG 2009). The populations on Point Lomo Naval Base and Cabrillo National Monument have been characterized as “excellent” (Reiser 1994).

4.3 Population structure

This species is a slow growing species (Roberts in litt. 2009). Nothing more is known about the species’ reproduction and population structure. Throughout this document, known occurrences of *E. misera* are referred to as populations, although there is insufficient information to determine the extent to which genetic exchange occurs between localities. See also Section 3.3.

4.4 Population trends

There is no information on the population status or trends in Mexico (CONABIO in litt. 2009).

In the United States, the Natural Heritage Program ranked the species as vulnerable in 1990 (NatureServe 2009a), based on an estimated occurrence of fewer than 80 populations, combined with the recent declines at that time (Bittman in litt. 2008; NatureServe 2009a). For instance, much *E. misera* habitat in Orange County was altered or destroyed prior to 1990. California DFG suspects the known occurrences may have decreased in their area of distribution, habitat, populations, individuals, quality of habitat, or recruitment, and the species is considered to be at moderate risk for extinction (Bittman in litt. 2008). Remaining occurrences are characterized as mostly small and fragmented, rendering them “moderately vulnerable,” according to the Natural Heritage Program standards (Roberts in litt. 2009) (see Section 5). The U.S. populations may also be experiencing the “edge effect,” wherein species on the edge of their range are naturally rarer and also more vulnerable to genetic shifts and local extirpation (MHCP 2000).

One large Orange County population, located in a conservation area, has been stable since 1983 (Roberts in litt. 2009). Reiser (1994) characterized the U.S. populations as “stable” in 1994. Extant populations are characterized as slow growing, but stable if undisturbed (Roberts in litt. 2009). The global status of the species is secure (NatureServe 2009a), based on the fact that the species is considered more common in Mexico, than in California (Bittman in litt. 2008; NatureServe 2009a).

4.5 Geographic trends

The geographic trend in Mexico is unknown. In the United States, all known locations of *E. misera* are presumed to be known (Reiser 1994).

5. Threats

Two extrinsic threats to *E. misera* have been identified: Habitat destruction and herbivory.

Habitat trends are discussed under Section 4.1. Coastal development pressure has been and continues to be the main threat to this species (Bittmann in litt. 2008; CONABIO in litt. 2009). In the United States, the species experienced a range reduction prior to the 1990s (Bittman in litt. 2008; NatureServe 2009a; Roberts in litt. 2009), due to urban growth, and some habitat continues to be under development pressure

(MHCP 2000). Pressures on coastal sage scrub habitat include habitat alteration caused by infrastructure development and resultant erosion caused by road construction and trail-building, ongoing or previous sand and gravel mining, roads, heavy off-road vehicle use, and trash dumping (California DFG 2009). Some populations have sustained heavy damage due to habitat alteration. For instance, trail construction at Corona State Beach in the 1980s led to translocation of most *E. misera* individuals in that locality, the current status of which is unknown. Another U.S. population occurs on a small site that is sandwiched between a residential area and a train rail line (Roberts in litt. 2009). At one locality, near the Mexican border, the species may be at risk from habitat alteration caused by border enforcement activities.

Herbivory may also be a threat to this species range-wide. European rabbits (*Oryctolagus cuniculus*) were introduced to the San Benito Islands in the early 1990s, severely damaging vegetation on the islands and nearly driving to extinction the West San Benito endemic succulent, *Dudleya linearis* (Donlan et al. 2002; Junak and Philbrick 2000). By the late 1990s, on East San Benito Island (Mexico), feral rabbits were reportedly browsing the bark of *E. misera* during a particularly dry year (Junak and Philbrick 2000). An examination of herbivore effects on plant community structure on West and East San Benito in the late 1990s indicated that *E. misera* and *Malva pacifica* were the most heavily browsed native plants on the islands (Donlan et al. 2002). Over a 7-month period in late-1998, feral rabbits were removed from West and Middle San Benito, as part of a regional island conservation program; removal began on the West San Benito specifically to protect *D. linearis* (Junak and Philbrick 2000). Rabbits were removed from East San Benito in late 1999 (Donlan et al. 2002). The current status of *E. misera* on the islands is unknown. *Antilocapra americana peninsularis* (peninsular pronghorn) also reportedly forage on *E. misera* in Mexico (Cancino et al. 2005).

Several non-native animals occur on Catalina Island (Long Beach, California, USA), including *Antelope cervicapra*, *Odocoileus hemionus*, and *Bison bison* (Catalina Island Conservancy 2009b). There is one known *E. misera* population on the island and herbivory is suspected as the cause for the species' low reproductive output (Catalina Island Conservancy 2009a) (see also Section 3.3). In 2000, an experimental outplanting of 32 *E. misera* plants was initiated. *Euphorbia misera* plants were distributed amongst four locations to explore the species' habitat requirements, with one location was fenced to determine the effect of herbivory (Knapp 2003). Monitoring between 2000 and 2003 indicated that water availability was the most important factor determining the growth and persistence of the *E. misera* on the Island. However, browsing and trampling in unprotected plantings appears to have heightened the risk of mortality. During drought conditions in 2002, six plants died and all were located outside the exclosure. Additionally, the fenced-in plantings are taller, larger, and have higher survival and less damage than the plantings that are not protected, another indication that browsing and trampling have a negative impact on this species (Knapp 2003).

Domestic trade of *E. misera* in the United States was considered a potential threat to this species in the initial review for PC18 (<www.cites.org/eng/com/pc/18/E-PC18-16-01-02.pdf>). However, additional information indicates that this is not a threat to this species. See Section 6.1.

6. Utilization and trade

6.1 National utilization

In Mexico, *E. misera* is known as a medicinal plant (Duke 1998; Felger and Moser 1974). For instance, in the pharmacopeia of the Seri Indians (native to the Sonoran coast and the islands of Tiburón and San Esteban, Baja California), *E. misera* root tea is consumed to combat stomach ache, dysentery and venereal disease (Felger and Moser 1974). However, it appears that medicinal use of this species highly localized, and not in widespread use outside the Seri population. There is no evidence that *E. misera* tea is traded internationally (CONABIO in litt. 2009). See Section 7.2.

In the United States, *E. misera* is traded domestically as a cultivated ornamental plant, is widely available commercially, and is easily propagated and cultivated (see Section 8.4). Given that it is illegal to dig wild specimens of the species on public and private lands in California without a permit (see Section 8.3.2) and that there has been no evidence of known wild collection of this species on protected or reserve lands in California (see Section 8.2), we have concluded that domestic horticultural trade in the United States is not a threat to the wild populations of this species.

6.2 Legal trade

The only CITES-recorded trade of specimens of this species occurred in the 1990s, when the United States exported five live specimens reported as artificially propagated (UNEP-WCMC 2009b).

6.3 Parts and derivatives in trade

None known.

6.4 Illegal trade

There is no information to suggest illegal trade is occurring.

6.5 Actual or potential trade impacts

In Mexico, *E. misera* is not cultivated and there is no evidence of domestic horticultural trade in this species.

In the United States, *E. misera* is already known in commercial cultivation and is traded domestically as such. It is easy to propagate from cuttings or seed (Millspaugh 1917; Schwartz and LaFon 1983) (see Section 8.4). The species is protected from wild-harvest off public and private land by the California Desert Native Plants Act (Bittman in litt. 2008) (see Section 8.3.2), and there is no evidence that wild populations have been or are being harvested (Bittman in litt. 2009; Roberts in litt. 2009) (see Section 8.2). Moreover, many occurrences are found on cliff faces and other rugged areas that are inaccessible, which aids in their protection (Roberts in litt. 2009).

7. Legal instruments

7.1 National

In Mexico, *E. misera* is protected by the General Law for Sustainable Forest Development (Ley General de Desarrollo Forestal Sustentable; LGDFS), which regulates the management and harvest of woody and non-woody species, and the Law of Ecological Equilibrium and Environmental Protection (Ley General del Equilibrio Ecologico y Protección al Ambiente; LGEEPA). In addition to these General Laws, additional Mexican Official Regulations (Normas Oficiales Mexicanas) apply to this species. See Section 8.3.2.

In the United States, just over half the known extant occurrences are in protected areas (see Sections 4.1 and 8.1). The species is protected by the California Desert Native Plants Act (California Department of Fish and Game (DFG) 2009; Catalina Island Conservancy 2009a; Roberts in litt. 2009) and, therefore, is subject to protection under the U.S. Lacey Act (see Section 8.3.2). Impacts on the species are taken into consideration under the California Environmental Quality Act (CEQA) and by the California Coastal Commission (CCC 2009). See Section 8.3.2.

7.2 International

Euphorbia misera has been nationally protected in CITES Appendix II since 1975 (UNEP-WCMC 2009a).

8. Species management

8.1 Management measures

In Mexico, under Natural Protected Areas, the General Law of Ecological Equilibrium and Environmental Protection, promotes the safeguarding of wild species, evolution, continuity, and the preservation and enhancement of sustainable use of biodiversity. As described in Section 4.1, at least half of the known distribution records of *E. misera* occur inside Natural Protected Areas (CONABIO in litt. 2009).

In the United States, its protected status in California and the occurrences within protected areas means that impacts to the species are taken into consideration for activities occurring within its habitat. In its role as a designated coastal management agency (CCC 2009), the California Coastal

Commission takes into consideration potential impacts to *E. misera* occurrences, all of which are under their jurisdiction (Roberts in litt. 2009).

8.2 Population monitoring

In Mexico, monitoring occurs within National Protected Areas, but there are no specific monitoring actions for this species.

In the United States, the California DFG monitors *E. misera* infrequently. Most of the observations were made in the 1980s, with a few observations made more recently and several historical observations (from the 1930s and 1960s) (California DFG 2009; Roberts in litt. 2009). Both the natural and outplanted populations are being monitored by the Catalina Island Conservancy (Knapp 2003; Ratay in litt. 2009). Overall, the populations in the United States are considered fairly stable, unless disturbed (Roberts in litt. 2009), and there is no known wild collection from the populations being monitored by California DFG (Bittman in litt. 2008; Roberts in litt. 2009), except for limited collections for herbarium specimens (Roberts in litt. 2009).

8.3 Control measures

8.3.1 International

International trade does not appear to be affecting the status of *E. misera* in Mexico or the United States. Since listing in 1975, no permits have been issued to export wild-collected specimens. In addition, there is no evidence that international trade in wild-collected specimens is likely to occur as a result of deleting this taxon from the CITES Appendices (see Sections 6 and 8.4).

8.3.2 Domestic

In Mexico, *E. misera*, as a non-woody species, is protected by Mexican laws such as LGDFS which penalizes any activity, such as trafficking, collecting, possessing, transporting, storing or extracting any specimen, product or by-product, without authorization (CONABIO in litt. 2009) (see Section 7.1).

Control measures are carried out by PROFEPA-SEMARNAT, Mexico's CITES Enforcement Authority as part of the Environmental Justice Program. Wildlife and Forestry Inspection Programs are carried out inside the country, and the Environmental Inspection Program on Ports, Airports and Frontiers, through 72 offices in the main points of international commerce, are executed to control illegal trafficking in the main distribution and sales centers in the country, to verify the legality of the imports and exports of goods and commodities, and to prevent the international illegal trade of specimens, parts and derivatives.

In the United States, because it is a succulent, *E. misera* is protected under the California Desert Native Plants Act (California Food and Agricultural (Cal. FAC.) Code §80001-80006), under which it is illegal to dig up desert plants for resale from public or private property without a permit. According to this Act, wild, uncultivated plants that are intended for resale may not be harvested without a permit and each harvested specimen must be accompanied by a native plant tag and seal.

Because it is protected from wild collection under California state law, it is also protected by the federal U.S. Lacey Act (P.L. 97-79, 95 Stat. 1073, 16 U.S.C. 3371-3378, as amended in 2008). Under this Act, it is generally prohibited to import, export, transport, sell, receive, acquire, purchase, or engage in the interstate commerce of any plant taken, possessed, transported or sold in violation of any relevant law, treaty, or regulation of the United States, any relevant Indian tribal law, any relevant foreign law, or any relevant law or regulation of a U.S. State.

Euphorbia misera was included in the California Native Plant Society's (CNPS) rare plant program in 1974 and is currently on CNPS List 2, which includes "plants rare, threatened or endangered in California, but more common elsewhere" (Bittman in litt. 2008; CNPS 2009). Because of its status as a List 2 species, the California Environmental Quality Act (CEQA) requires, disclosure of occurrences of this species during pre-project reviews and surveys, as

well as mitigation for any significant impacts resulting from anticipated land use changes where this species occurs (Bittman in litt. 2008).

Euphorbia misera is protected by the California Coastal Commission, a quasi-governmental organization (CCC 2009), which has jurisdiction over all known *E. misera* populations (Roberts in litt. 2009). This Commission plans and regulates the use of land and water in the coastal zone and administers the federal Coastal Zone Management Act (CZMA). Among the provisions of the CZMA is the regulatory control of all federal activities throughout the coastal zone (CCC 2009).

8.4 Captive breeding and artificial propagation

Euphorbia misera is well-known in commercial cultivation (Jepson Flora Project 1993) and grows readily from seed and cuttings (Millspaugh 1917; Schwartz and LaFon 1983). Stem cuttings, when first allowed to callous over, will grow if planted. Seeds are easily harvested by bagging the ripening fruit, and can be stored (Dave's Garden 2009). Plants are widely available from a variety of domestic sources in the United States, including private nurseries and native plant societies (i.e., CNPS 2006).

8.5 Habitat conservation

More than half the known population, and, therefore, *E. misera* habitat, is located within protected areas or private conservation lands in Mexico (CONABIO in litt. 2009) and the United States (California Department of Fish and Game (DFG) 2009; Catalina Island Conservancy 2009a; Roberts in litt. 2009). Coastal scrub habitat in the United States supports a number of imperiled vertebrate species (see Section 3.5) and is the focus of specific conservation consideration (de Becker 1998).

8.6 Safeguards

In Mexico, *E. misera* will continue to be protected within protected areas and under the legislation as described in Sections 7.1 and 8.3.2.

In the United States, *E. misera* will continue to be monitored by the California DFG (Bittman in litt. 2008; NatureServe 2008; Roberts in litt. 2009). The species will continue to be protected from wild-harvest by the California Desert Native Plants Act (Cal. FAC. Code §80001-80006) and also by the U.S. Lacey Act (P.L. 97-79, 95 Stat. 1073, 16 U.S.C. 3371-3378, as amended in 2008). The species continues to be listed on CNPS List 2 (Bittman in litt. 2008; CNPS 2009) and remains under the jurisdiction of the California Coastal Commission (CCC 2009), such that the welfare of this species is taken into consideration when habitat-altering activities are proposed. See Section 8.3.2.

9. Information on similar species

According to experts, a layperson is unlikely to confuse *E. misera* with any of the other Mexican or U.S.-native succulents *Euphorbia* (including *E. antisyphilitica* and *E. radians*) that remain listed in CITES Appendix II (Bittman in litt. 2008; Roberts in litt. 2009). These species occupy different ranges and are morphologically distinct, as follows:

Species	Mexican Range	U.S. Range	Leaf Morphology
Euphorbia antisyphilitica	Chihuahua, Coahuila, Durango, Nuevo León, San Luis Potosí, Tamaulipas, and Zacatecas	New Mexico and Texas	minute or absent
E. misera	Baja California, Baja California Sur, and Sonora (coastal)	California	obcordate (heart-shaped)
E. radians	Coahuila, Chihuahua, Jalisco, Durango, Michoacán, Oaxaca, San Luis Potosi, Sonora (inland), and Zacatecas	Arizona, New Mexico, and Texas	lanceolate (lance-shaped)

10. Consultations

Mexico and the United States developed this proposal in consultation with each other. The Scientific Authority of the United States of America solicited public comments via two public notices (U.S. *Federal Register* Vol. 73, No. 189 (2008) and Vol. 74, No. 132 (2009)). Consultation letters were sent to appropriate State and Federal agencies in the State of California, where this species occurs. Botanical experts were contacted for updated population and habitat information.

11. Additional remarks

None.

12. References

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